Attachment O2. Financial Assurance for Closure

1 CLOSURE COSTS

Table O2-1 summarizes the landfill closure cost estimate. The original landfill closure cost estimate included in the March 2002 Triassic Park Waste Disposal Facility permit was based on 2000 dollars. The landfill closure cost estimate presented in this permit modification has been updated to account for inflation using the change in the Consumer Price Index (CPI) between 2000 and 2011 (U.S. Department of Labor CPI, 2011). Using the CPI, the 2011 costs are 32 percent higher than those from 2000. All 2000 costs were increased by 32 percent for purposes of this analysis. After the Facility is constructed and operations begin, the landfill closure cost estimate shall be updated annually as required in 40 CFR § 264.142(b).

The landfill closure cost estimate is based on costs for closure when the Facility is at maximum capacity, which is the point in the Facility's active life when the extent and manner of its operation would make closure the most expensive. As required in 40 CFR § 264.142(a)(2), the landfill closure cost estimate is based on the costs of hiring a third party to close the Facility.

Water

The Gandy-Marley, Inc. (GMI) landfill closure cost estimate matches the total amount recommended by the Hearing Officer when considering approval of the original permit in 2002. The estimate includes detailed unit rates for all closure activities. In addition, it includes costs for water usage during construction and revegetation and for maintenance of the cover during the post-closure care period. Financial assurance for closure includes costs to acquire water rights for the water that will be needed for closure and post-closure care. The water requirements for closure were based on estimates from local revegetation specialists that estimated approximately $2,000/acre for water rights ($2,640/acre escalated to 2011). The landfill closure cost estimate utilizes almost twice that number. Water costs are included for the earthwork for backfilling, which is expected to be the major demand for water.

Cost Estimating Handbook

Cost-estimating handbooks (CRG and Caterpillar production program) were used for the major earthwork items in the closure costs. This includes the backfilling for the landfill during closure and clean soil backfilling for other facilities. Also included are major components of the cover placement. The handbook estimated backfill direct costs at $1.12 to 1.28/cubic yard (cy) ($1.48 to 1.69/cy escalated to 2011). This compares to the GMI estimate of $1.46/cy ($1.93/cy escalated to 2011). These numbers do not include the additional costs included in the landfill

closure cost estimate of 25% for indirect costs and 10% for New Mexico Environment Department (NMED) supervision.

Conclusion

The unit rates used in the cost estimate are conservative for the major earthwork components.

Erosion Control and Revegetation

The type and density of vegetation was assumed in the erosion calculations (60% cover). The drainage structures are also specified in the design drawings and specifications. The top surface slopes are sufficiently flat (6%) that contour ditches are not required. The access road ditches are sufficient to handle any runoff. The calculation of erosion of topsoil was based on the vegetation density (60% cover). The topsoil removed from the footprint of the landfill will be used for the final cover. Water needs and costs are discussed above. Maintenance of the cover is included in the post-closure cost estimate. This includes approximately $30,000 per year ($39,600 per year escalated to 2011) for maintenance (reseeding and erosion repair). Over the 30-year period, this totals approximately $900,000 ($1,188,000 escalated to 2011).

Seed Mix

Upon closure, GMI shall work with the local soil conservation service to develop a seed mixture that shall consist of both local types of vegetation along with good cover types of vegetation.

Vegetation Density

According to the sediment demonstration for the final cover, a 60% herbaceous cover (which includes litter) is required to keep erosion down to 2 tons/acre/year.

Final Drainage Channels

Channels 1, 2, 3, 4, and 5 will remain as permanent channels. The locations and designs for the channels are shown on Drawings 25 and 26.

Topsoil

Upon closure, GMI will use the topsoil that was stripped and stockpiled prior to construction of the site. At that time, the topsoil shall be tested and, according to the test results, appropriate soil amendments shall be determined and added.

2 FINANCIAL ASSURANCE FOR CLOSURE

40 CFR § 264.143 defines the standards for financial assurance for closure. The financial instrument selected to provide coverage for this requirement must be implemented and submitted to the NMED at least 60 days prior to the initial receipt of waste.

Upon receipt of the final permit for the Facility, GMI shall evaluate and select one of the financial instruments defined in 40 CFR § 264.143 to provide financial assurance for the closure of the Facility. Selection of one of the following six financial instruments shall consider the effectiveness of the particular options. The instruments defined in the regulations are:

i. financial test and corporate guarantee for closure;

ii. closure trust fund;

iii. surety bond guaranteeing payment into a closure trust fund;

iv. surety bond guaranteeing performance of closure;

v. closure letter of credit; and

vi. closure insurance

The appropriate instrument shall be selected, implemented, and submitted to NMED for review and approval a minimum of 60 days prior to the initial receipt of waste as required by 40 CFR § 264, Subpart H.

TABLE O2-1. LANDFILL CLOSURE COST ESTIMATE

Landfill Item	Cost	
	Approved Permit ($ in 2000)	**Permit Renewal ($ in 2011)**
Landfill Excavation Backfill	4,120,000	5,438,400
Cover Engineering Design	30,000	39,600
Landfill Cover	3,374,432	4,454,250
Demolition of Tanks, Concrete and Liner System	2,426	3,202
Leachate Treatment Facility Construction	0	0
Leachate Treatment Facility Operations	0	0
Leachate Pumping and Disposal (volume = 133,000 Gallons [551 tons])	98,021	129,388
Sump Vadose Zone Sampling and Analysis	8,000	10,560
Well Vadose Zone Monitoring System Sampling and Analysis	48,000	63,360
Soil Sampling and Analysis	104,040	137,333
Final Plat Survey	2,400	3,168
Certification of Closure Inspection	3,000	3,960
Certification of Closure Report	15,000	19,800
Subtotal	7,805,319	10,303,021
Water Rights and Application	114,000	150,480
Total Closure Cost	7,919,319	10,453,501